

**DIRECTORATE OF ENERGY**  
**GOVERNMENT OF HIMACHAL PRADESH**  
**SHANTI BHAWAN, PHASE-III, SECTOR-VI, NEW SHIMLA-171009(HP)**

**OFFICE ORDER**

Directorate of Energy is pleased to accord Technical Concurrence (TC) to Baggi HEP (2 x 21 MW) utilizing available head between Pandoh Reservoir Level (PRL) and Full Supply Level (FSL) of Sundernagar Hydel Channel at Baggi, diverted from Beas River at Pandoh Dam in Beas Basin, Distt. Mandi, Himachal Pradesh, allotted to "Bhakra Beas Management Board (BBMB), Sector 19-B, Madhya Marg, Chandigarh-160019" by Department of MPP & Power, Government of Himachal Pradesh vide letter No. MPP-F(2)-1/2019 dated 16.07.2019, at an estimated cost of Rs. 284.87 crore (Rupees Two Hundred Eighty Four Crore and Eight Seven Lakh only) including Interest During Construction (IDC), Escalation, Financial Charges(FC) and LADF @ 1.50 % of total project cost with the following stipulations:

1.
  - i) The abstract of the Estimated Cost approved by DoE, GoHP is enclosed at **Annex-I**, summary of financial package as considered by DoE, GoHP is enclosed at **Annex-II** and the Salient Features of the scheme are enclosed at **Annex-III**.
  - ii) The completion cost shall not exceed the above cost except on account of the following:-
    - a) Interest During Construction (IDC) and Financial Charges (FC) shall be as per actuals but not exceeding the amount as indicated at **Annex-I**, unless revised by DoE, GoHP while according concurrence under Section-8 of Indian Electricity Act 2003 after review of the financial package.
    - b) Change in rates of Indian taxes and duties such as Goods and Service Tax (GST), Custom Duty and levy of any other taxes/duties subsequent to issue of Technical Concurrence (TC)
    - c) Change in Indian law resulting in change in the cost.
2. The Technical Concurrence (TC) is subject to the fulfillment of the following conditions:
  - i) Completed cost/ Technical Concurrence (TC) shall not be re-opened due to the following:
    - a) Non acquisition of land.
    - b) Non- finalization of Power Purchase Agreement (PPA)
    - c) Delay in financial closure.
  - ii) The final financial arrangement shall not be inferior to the financing arrangement projected in the Detailed Project Report (DPR) for TC.
  - iii) The cost of the project cleared by the DoE, GoHP is indicative and shall have no binding on the regulator while fixing the tariff. The tariff of the project shall be regulated by the appropriate Electricity Regulatory Commission.
  - iv) The public issue expenses, if any, shall be reconsidered at the time of approval of completion cost based on documentary proof and in accordance with Security Exchange Board of India (SEBI) guidelines regarding regulation of public issue expenses.
  - v) Fulfillment of conditions stipulated in Central Electricity Authority (CEA)/Central Water Commission (CWC) guidelines in respect of civil works at the stage of detailed designs/execution.
  - vi) In case, changes are made in design parameters during construction due to site conditions or otherwise, the same shall be intimated and got Concurred from DoE, GoHP before implementation of such changes.

*[Signature]*

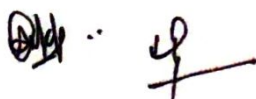
*[Signature]*  
AEE(TC)



- vii) Any increase in the cost estimate due to design modifications and geological surprises would be absorbed by "Bhakra Beas Management Board (BBMB), Sector 19-B, Madhya Marg, Chandigarh-160019".
- viii) No additional cost shall be allowed due to Resettlement & Rehabilitation (R&R) Plan.
- ix) Normal operation life of the hydro power plant shall be as per provisions of latest CWC/CEA guidelines or Central Electricity Regulatory Commission (CERC)/Himachal Pradesh Electricity Regulatory Commission (HPERC) regulations.
- x) The Concurrence is subject to clearance of the project and Transmission Line by MoE&F from environmental and forests angle. The statutory and administrative clearances as per **Annex-IV** shall be obtained before execution/ implementation of the project, if applicable.
- xi) For evacuation of power, the interconnection point with the State grid and interconnection facilities at the interconnection point shall be provided, operated and maintained at the cost of the Developer.
- xii) The cost of providing and/or strengthening/additions etc. of the system at and beyond the Interconnecting Sub-station, which may also include the cost of replacement of switchgear/ protection and provision of shunt capacitors, strengthening of bus bars, apart from other works required at injection voltage level and other one or more successively higher voltages, civil works relocation of existing bays etc. shall be recovered by HPSEBL/HPPTCL, as per the regulations of HPERC read with the clarifications/decisions by HPERC and/or any other competent authority as may be finally applicable. The share of Developer on this account shall be paid by the Developer to Himachal Pradesh State Electricity Board Limited (HPSEBL)/ Himachal Pradesh Power Transmission Corporation Limited (HPPTCL) as per the final decision of the competent authority.
- xiii) Whereas the HPSEBL/HPPTCL shall endeavor to provide the power evacuation system at the earliest, the scheduled date for providing evacuation arrangements shall be spelt out in the PPAs on case to case basis inter-alia, keeping in view the time lines indicated in the relevant plan and approved by HPERC.
- xiv) The powerhouse generating equipments as well as other electrical equipments to be provided by the Developer shall be compatible for parallel operation with the State grid after interfacing. The Developer shall be responsible for any loss of generation on this account.
- xv) O&M charges for maintenance of inter connection facilities at the interconnection sub-station shall be paid by the Developer to HPSEBL/HPPTCL throughout the period, the Developer runs the project and the same shall be reviewed at the beginning of every financial year.
- xvi) For evacuation of power the IPP shall interface this project as per HPPTCL letter No. HPPTCL/Plg/TEC/Vol-IX/2021-7282-83 dated 23.08.2021 at **Annex-V**.
- xvii) The project line shall be provided, operated and maintained by the Developer at his cost as per normal conditions after obtaining approval of HP Govt. under Section 68(1) of Electricity Act, 2003.
- xviii) The above mentioned evacuation arrangements shall be subject to the HPERC/CERC approval of "Comprehensive area wise plan for augmenting and establishing of transmission/sub-transmission system for evacuation of power from HEPs" which has already been submitted to HPERC. The Transmission/Distribution Licensee may however evolve alternate system(s) depending on the site conditions and subsequent developments with the approval of HPERC.
- xix) The Developer shall develop operate and maintain the Project including the dedicated transmission system subject to compliance with the following:
- a) Grid code and standards of grid connectivity.
  - b) Technical as well as Mechanical standards for construction of Electrical lines.
  - c) Norms of System Operation of the concerned State Load Dispatch Center




- (SLDC) or Regional Load Dispatch Center (RLDC).
- d) Directions of the concerned SLDC or RLDC regarding operation of dedicated transmission line.
  - e) The Developer will only be allowed to inject power in HP system with the undertaking that necessary action to provide tele-metering to SLDC shall be provided by them and specifications required to be got approved from the office of SLDC, HP Load Dispatch Society, Shimla from compatibility point of view with existing Supervisory Control and Data Acquisition (SCADA) system.
- 
- xx) The Hydro generating units shall be capable of generating up to 110% of rated capacity (Subject to rated head being available) on continuous basis as per Sr. No 7 ( Part-II) of Ministry of Power (Central Electricity Authority) notification No 12/X/STD (CONN) GM / CEA dated 15/10/2013 and HP Govt. Swaran Jayanti Energy Policy, 2021.
  - xxi) The conditions on these lines shall have to be suitably included by the Developer in the PPA etc. apart from other standard conditions.
  - xxii) The observations of DoE, GoHP on the DPR and replies thereof shall form an integral part of the DPR.
  - xxiii) The proposed arrangement of laying penstock header & penstock with length 160.60 m & 45.12 m respectively should be designed w.r.t. all necessary parameters of earth pressure/water pressure in empty/full condition, earthquake condition and with regard to all safety standards norms.
  - xxiv) LADC/LADF amount and activities shall be implemented as per HP Govt. Swaran Jayanti Energy Policy, 2021 at chapter-V.
  - xxv) The additional 1% (one percent) free power from the project shall be provided and earmarked for a Local Area Development Fund (LADF) as per the provision stipulated in the HP Govt. Swaran Jayanti Energy Policy, 2021 at chapter-V.
  - xxvi) The Geological explorations as per CWC guidelines should be carried out before taking up project construction and submit the report to the DoE, GoHP.
  - xxvii) The Concurrence is based on the reports and data furnished by the Developer in the DPR and the relevant information provided therein. It is presumed that information furnished is correct and has been collected reliably after carrying out detailed field investigations and surveys under the supervision of competent personnel. The scrutiny of DPR does not cover the examination of the detailed designs & working drawings of project components in regard to their structural, hydraulic and mechanical performance, safety and also of their positioning and fixing at site. This shall be ensured by the Developer as per standard norms & manuals.
- 
3. The project shall be completed within 42 months from the date of start of the construction work.
  4. The completion cost of the scheme shall be submitted to DoE, GoHP within 6 months from the Commercial Operation Date (COD) of the plant as per HP Govt. Swaran Jayanti Energy Policy, 2021.
  5. The project promoters/project authorities shall give free accessibility to the officers and representatives of DoE, Himurja and other relevant Govt. Departments, Commissions etc. to have on the spot assessment of various aspects of the project.
  6. The firm financial package and tie-up of balance inputs/clearances shall be completed within the period as stipulated in the HP Govt. Swaran Jayanti Energy Policy, 2021 and amendments thereof /Implementation Agreement (IA)/Supplementary Implementation Agreement (SIA).
  7. In case the time gap between the Technical Concurrence (TC) of the scheme and actual start of work on the project is three years or more, a fresh Concurrence shall be obtained from DoE, GoHP before start of actual work.





8. The project developer shall submit monthly hydrological, meteorological data observed at the project site and monthly progress reports on the prescribed format along with expenditure actually incurred to DoE, GoHP, duly certified by statutory auditors till the Commercial Operation of the plant.
9. The DoE, GoHP reserve the right to revoke the TEC, if the conditions stipulated above are not complied with to the satisfaction of the GoHP.

**BY ORDER OF THE GoHP**


  
**Director (Energy),  
Government of Himachal Pradesh**

**No. DoE/CE(Energy)/TC-Baggi HEP/2022- 6455- 62**

**Dated: 01-10-2022**

Copy for information and necessary action to the:

1. The Chief Secretary (Power, NES) to H.P. Govt., Shimla-171002.
2. Secretary, Ministry of Non-Conventional Energy Sources (MNES), Block No.14, CGO Complex, Lodhi Road, New Delhi-110003.
3. Director, Environmental & Scientific Technologies, Narayan Villa, Near Wood Villa Palace, Shimla-171002 (HP).
4. Deputy Commissioner, Mandi, Himachal Pradesh – 175001 (HP).
5. General Manager, HPPTCL, Himfed Bhawan, Panjari, Below Old MLA Quarters, Shimla-171005 (HP).
6. Chief Engineer (SP), HPSEB Ltd, Uttam Bhawan, Dogra Lodge, Shimla-171004 (HP).
7. Chief Engineer (SO), HPSEB Ltd, Vidyut Bhawan, Shimla –171004 (HP).
8. Bhakra Beas Management Board (BBMB), Sector 19-B, Madhya Marg, Chandigarh-160019.

  
**Director (Energy),  
Government of Himachal Pradesh**

  
**Sr. Executive Engineer, 7/11/22  
Hydel Channel & Baggi Gate Divn..  
B.B.M.B. Sundernagar.**


**ANNEXURE-I**

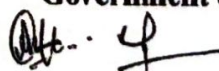
**Baggi HEP (2 x 21 MW) in District Mandi of Himachal Pradesh allotted to "Bhakra Beas Management Board (BBMB), Sector 19-B, Madhya Marg, Chandigarh-160019".**

**ABSTRACT OF COST ESTIMATE**

<b>Sr. No.</b>	<b>Description of works</b>	<b>Amount (In Rs. Crore)</b>	
<b>a)</b>			
1.	Civil works i/c other Misc. Expenses	117.65	} Price Level December, 2020
2.	Electro Mechanical works	134.00	
3.	Transmission works	5.00	
	<b>Sub Total (a)</b>	<b>256.65</b>	
<b>b)</b>			
1.	Interest During Construction (IDC)	24.01	
	<b>Sub Total (b)</b>	<b>24.01</b>	
	<b>Total (a+b)</b>	<b>280.66</b>	
<b>c)</b>	<b>LADF @1.50 % of (a+b)</b>	<b>4.21</b>	
	<b>Grand Total (a+b+c)</b>	<b>284.87 crore</b>	

**(Rupees Two Hundred Eighty Four Crore and Eight Seven Lakh only)**

  
**Director (Energy),  
Government of Himachal Pradesh**



  
**Sr. Executive Engineer, 7/11/22  
Hydel Channel & Baggi Gate Divn.,  
B.B.M.B. Sundernagar.**

## ANNEXURE-II

**Baggi HEP (2 x 21 MW) in District Mandi of Himachal Pradesh allotted to "Bhakra Beas Management Board (BBMB), Sector 19-B, Madhya Marg, Chandigarh-160019".**


### I. Tentative Financial Package

Debt : Equity - 70 : 30

Sr. No.	Description	Amount (In Rs. crore)
A	Debt. from Financial Institutions	199.41
B	Equity	85.46
	Total (Debt. + Equity)	284.87

### II. Terms of Loan

Sr. No.	Item	Package
1.	Source of Debt.	Financial Institutions
2.	Loan Amount (In Rs. crore)	199.41
3.	Rate of Interest	10.20 %
4.	Repayment Period	12 Years

  
Director (Energy),  
Government of Himachal Pradesh

  
Sr. Executive Engineer,  
Hydel Channel & Baggi Gate Divn.,  
B.B.M.B. Sundernagar.



### ANNEXURE-III

**Baggi HEP (2 x 21 MW) in District Mandi of Himachal Pradesh allotted to "Bhakra Beas Management Board (BBMB), Sector 19-B, Madhya Marg, Chandigarh-160019".**

#### SALIENT FEATURES

##### LOCATION

State	Himachal Pradesh
River	Beas
District	Mandi

Proposal	The Baggi Power Project has been planned utilizing the discharge passing through PBT to generate power at 990 MW Dehar Power Station of BSL Project. The discharge passing through PBT is proposed to be diverted through Baggi Power station which join the Sundernagar Hydel Channel downstream of Baggi Power Station.
----------	---

Vicinity	Baggi, Sundernagar
----------	--------------------

Accessibility	By Road	12 Km upstream of Sundernagar Town in Distt. Mandi
---------------	---------	--

	By Air port	Bhuntar, 80 Km
	By Railway Station	BG Kirtpur

Topographical Sheet	53 A/14, 53 E/2 & 53 E/26
---------------------	---------------------------

##### Geographical coordinates of the scheme

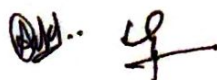
Longitude	76°- 58'-14.10" E	76°- 58'-22.97" E
Latitude	31°- 35'-11.60" N	31°-35'-16.37"N

##### PANDOH RESERVOIR LEVEL

Maximum	El 896.4 m
Normal	El 894.3 m
Intermediate	El 887.3 m
Minimum	El 883.9 m

##### PANDOH-BAGGI TUNNEL

Number	One
Shape and Size	Circular, 7.62 m Dia.
Length	13.20 km
Maximum Capacity	254.90 cumecs



**BY-PASS TUNNEL (Already constructed)**

Number	One
Shape and Size	Circular, 6.10 m Dia.
Length	32.00 m
Total Design Discharge	119.60 cumecs
Maximum Capacity	174 cumecs

**SURGE SHAFT**

Type	Orifice Type
Diameter	a) 7.00 m Dia from El 842.21 m to El 882 m b) 10.00 m Dia from El 882.00 m to El 892.00 m
Height	49.79 m
Orifice Shape and Area	Irregular Shape, 18.35 sq. m

**CATCHER CHAMBER**

Diameter	33 m
Height	14.40 m (from El 882.00 m to El 896.40 m)

**PENSTOCK HEADER**

Number	One
Type	Circular, Steel-lined
Diameter	6.10 m
Length	160.60 m
Thickness of Steel-liner	18 mm

**PENSTOCK**

Number	Two
Type	Circular, Steel-lined
Diameter	4.4 m
Length	45.12 m
Thickness of Steel-liner	18 mm

**DRAIN PIPES**

Number	Two
Diameter	2.5m
Length	300m
Thickness	16mm

**POWER HOUSE**

Type	Surface Power House
Size of Machine Hall	40 m X 23 m X 12 m(LxBxH)
Design Discharge-2 Units	119.6 cumecs
Installed Capacity	42 MW (2 x 21 MW)
Maximum Head	49.54 m
Net Design Head	38.94 m
Minimum Head	21.34 m

**TURBINE**

Type of Turbine	Vertical Francis
-----------------	------------------



Maximum output	23.45 MW
Rated output	21.32 MW
No. of Units	Two
Synchronous Speed	187.5 rpm
Specific speed	283 rpm
Nominal Runner Dia.	3200 mm
Type of Main Inlet Value	Butterfly
Nominal Dia.	4000 mm
Type of Syn. Bypass Value	Howel Bunger Type
Size of Syn. Bypass Value	2200mm
No. and Capacity of Units	2 Nos. of 21 MW each
Efficiency	93.50%
Service Bay Level	El 848.00 m
Bottom of Daft Tube	El 830.60 m
Centre Line of Turbine	El 840.00 m

#### **TAIL RACE CHANNEL**

Size	29 m (L) x 14.32 m (W)
Minimum Tail Water Level	El 842.59 m
Maximum Tail Water Level	El 844.23 m

#### **GENERATOR**

Type	Vertical Shaft Umbrella type
Power Output	2 x 21 MW
Continuous overload	10%CoL
Power Factor	0.85 lag
Generator Voltage	11 kV
Efficiency	98.50%

#### **POWER GENERATION**

Installed Capacity	42 MW
Annual Energy Generation	
90% Dependable Year	135.60 MU per Annum
Construction period	42 months

**Director (Energy),  
Government of Himachal Pradesh**


*[Signature]*  
**Sr. Executive Engineer,**  
**Hydel Channel & Baggi Gate Divn.,**  
**B.B.M.B. Sundernagar.**

# ANNEXURE-IV

**Baggi HEP (2 x 21 MW) in District Mandi of Himachal Pradesh allotted to "Bhakra Beas Management Board (BBMB), Sector 19-B, Madhya Marg, Chandigarh-160019".**

## LIST OF STATUTORY AND ADMINISTRATIVE CLEARANCES REQUIRED

Sr.No.	ITEM	AGENCY	REMARKS
1.	WATER AVAILABILITY	1. State Govt. 2. CWC	Interaction with State Govt. Deptt. & CWC required. Relevant Irrigation Act of the State & Central Water Commission to be implemented.
2.	HPSEBL CLEARANCE	1. HPSEBL. 2. State Govt.	As per Indian Electricity Act, 2003.
3.	POLLUTION CLEARANCE WATER AND AIR	State/Central Pollution Control Board	Water (Prevention & Control of Pollution) Act, 1974 Air (Prevention & Control of Pollution) Act, 1981.
4.	FOREST CLEARANCE	1. State Govt. 2. MoEF & CC, GoI.	Coordination with State Forest Deptt./ Min. of Environment & Forest (MoEF & CC) regarding Forest (Conservation) Act, 1980.
5.	ENVIRONMENT & FOREST CLEARANCE	1. State Govt 2. MoEF & CC, GoI.	As per item (3) & (4) and Latest Govt. Policy in force.
6.	REGISTRATION	Registrar of Companies.	Under Indian Companies Act, 1950.
7.	REHABILITATION & RESETTLEMENT OF DISPLACED FAMILIES BY LAND ACQUISITION	1. State Govt 2. MoEF & CC, GoI.	
8.	EQUIPMENT PROCUREMENT	Directorate General of Foreign Trade (DGFT)	As per Import & Export Acts.

  
Director (Energy),  
Government of Himachal Pradesh

  
Sr. Executive Engineer,  
Hydel Channel & Baggi Gate Divn.,  
B.B.M.B. Sundernagar.





**H.P. POWER TRANSMISSION CORPORATION LIMITED**

(A State Government Undertaking)

**HIMFED Bhawan, Panjari, New ISBT Road  
SHIMLA - 171005**

**CIN: U40101HP2008SGC030950**

**ANNEXURE-V**

No. HPPTCL/Plg/TEC/Vol-IX/2021-7282-83 Dated: - 23/08/21

To

✓ **Chief Engineer (Energy),  
Directorate of Energy, GoHP,  
New Shimla, 171009.**



**Sub: - Regarding Power Evacuation of (2 x 21 MW) Baggi HEP**

Sir,

This is with reference to Transmission Part of DPR (Detailed Project Report) of Baggi HEP (2 X 21 MW) (Copy Enclosed) in receipt of HPPTCL for grant of TEC. BBMB vide their letter No.3995-97/CS/C-134/Vol-VI, dated-11.08.2021, (Copy Enclosed) have further clarified that the generation of the project is during lean period from 1<sup>st</sup> October to 20<sup>th</sup> April.

In this regard it is intimated that the Baggi HEP (2 x 41 MW) shall be evacuated by S/C LILO of Kangoo - Bajaura line subject to shifting of Malana-I HEP to 220/132 kV Charor Substation of HPPTCL.

It is further added that in case of any delay in shifting of Malana- I HEP to 220/132 kV Charor substation of HPPTCL, the power of the Baggi HEP shall be evacuated through the above arrangement with provision of SPS if required, as corridors for evacuation are expected to be relieved during the projected period of generation of Baggi HEP.

Yours faithfully,

**GM (C&D)  
HPPTCL, Shimla-05**

**Copy to-**

1. Chief Engineer (System Planning) HPSEBL, Dogra Lodge, Shimla 171004.

Director (Energy)  
C.E (Energy)  
S.E. 1 (Dam, Env. IT Wb, SDA, Safety)  
S.E -2 (TEC)  
S.E -3 (Power Sale, SDA, Commercial Billing)  
S.E -4 (Allot, Policy, LADF, Legal, V.S., Monitoring)  
Admin., Accounts & Finance

**GM (C&D)  
HPPTCL, Shimla-05**

*SE (TEC)*

*35/8/2021*

*Pl. file.*

**Sr. Executive Engineer, 7/11/22  
Hydel Channel & Baggi Gate Divn.,  
B.B.M.B. Sundernagar.**